

DOCUMENT RESUME

ED 049 582

EC 032 162

AUTHOR Stott, D. E.
TITLE Behavioral Aspects of Learning Disabilities:
Assessment and Remediation.
INSTITUTION Guelph Univ. (Ontario).
PUB DATE 77
NOTE 45p.
EDRS PRICE MF-\$0.65 HC-\$3.29
DESCRIPTORS Behavior Patterns, *Behavior Rating Scales,
*Educational Diagnosis, *Exceptional Child
Education, *Learning Characteristics, *Learning
Disabilities, Learning Theories

ABSTRACT

Both assessment and remediation of primary and secondary behavioral handicaps to learning are discussed, and a classification of behavior styles detrimental to learning, based upon observation of the child's behavior in learning situations, is presented. Primary learning-handicaps are defined as aspects of impairment of temperament which are in evidence in the child's general behavior. Failure arising either from the primary handicaps or from cultural disadvantage is said to cause secondary behavioral handicaps called pseudo-adjustments (avoidances and compensations). How such learning disabilities may amount to a de facto retardation or pseudo-retardation is pointed out. Techniques of assessment and remediation are reviewed. A Guide to the Recording of the Child's Behavior in the Learning Situation is presented, in which the unproductive learning-strategies are grouped under 14 headings. The form, allowing the teacher to rate the child's behavior in each area according to three degrees of severity, serves as a profile of faulty learning styles. (KW)

BEHAVIORAL ASPECTS OF LEARNING
DISABILITIES: ASSESSMENT AND REMEDIATION

D. H. Stott
Chairman, Center for Educational Disabilities
and Professor of Psychology

University of Guelph
Guelph, Ontario

"PERMISSION TO REPRODUCE THIS
COPYRIGHTED MATERIAL HAS BEEN GRANTED
BY D. H. Stott

TO EPIC AND ORGANIZATIONS OPERATING
UNDER AGREEMENTS WITH THE U.S. OFFICE OF
EDUCATION. FURTHER REPRODUCTION OUTSIDE
THE EPIC SYSTEM REQUIRES PERMISSION OF
THE COPYRIGHT OWNER."

CONTENTS

	page
Part I New lamps for old	2
Part II Assessment of primary behavioral handicaps to learning	7
Part III Assessment of secondary behavioral handicaps (pseudo-adjustments)	17
Part IV Mental Handicap	24
Part V Techniques of remediation	29
References	
Appendix:	
Guide to the Recording	
Progress card for the continuous recording of learning styles and their results	
Sample profile of faulty learning styles	

SUMMARY

Explanations of learning disability in terms of gross psychometric-cognitive and perceptual variables are collapsing in the face of experimental evidence. We are thrown back to uncommitted observation of the child's behavior in the learning situation.

Many years of such observation have resulted in a classification of behavior-styles detrimental to learning. The primary learning-handicaps are aspects of impairment of temperament which are in evidence in the child's general behavior. Failure arising from these primary handicaps or cultural disadvantages tends to generate secondary behavioral handicaps termed pseudo-adjustments (avoidances and compensations).

In extreme cases such learning-disabilities may amount to a de facto retardation (pseudo-retardation) which can be distinguished from genuine retardation only by its inconsistencies.

The unproductive learning-strategies are grouped under 14 headings in a Guide completed by the teacher. Beneath each are descriptive wordings for the recording of the behavior in three degrees of severity.

This "Guide to the Recording of the Child's Behavior in the Learning Situation" can be used in connection with referral for Special Education, in the assessment of the success of training in better learning strategies, and in the training of teachers and school psychologists.

Guidelines are given for the remediation of each type of faulty learning strategy.

PART I - NEW LAMPS FOR OLD

In the area of learning disabilities we have to come to a point where we have lost confidence in the explanations and remedies of a few years ago without having found anything to put in their place. Most of us, with Piaget, try to understand the child's cognitive development as the result of interaction with his environment, in course of which experiences are built into concepts. But it is discouraging to read one of the leading proponents of this point of view, Kohlberg (1968), arguing that, "specific types of preschool academic and linguistic training, even if immediately successful, are unlikely to have long-run general beneficial effects and that programs directed toward raising general psychometric intelligence are unlikely to have marked success."

Either we give up, reconciling ourselves to a position of helplessness before the spectacle of innumerable children suffering from learning disabilities - or we have to look in some other direction. If one's mathematics produce the wrong answer it is wise to look back upon one's calculations. Perhaps, for our part, we have got stuck in a cognitive blind alley. After all, the cognitive processes merely inform us about the nature of our environment and what will happen if we do certain things.

In the behavioral system they are 'resource persons', not the prime movers. A more fundamental variable is the individual's motivational system - by which is meant the kinds of relationships with his environment that he sets out to establish. But it would be wrong to swing the pendulum towards the conative or 'emotional' processes and neglect cognition, because the behavioral system is one and indivisible.

This outline presents what may be termed a behavioral (but not behavioristic) approach to learning and learning disability. It involves a breakaway from the exclusively cognitive approach which in the writer's opinion has clogged up our thinking and limited our observation.

The stereotype of 'intelligence'

It is surprising how long, in the face of our supposedly empirical philosophy of knowledge, the concept of intelligence has lasted as the chief variable in learning disability. After all, one cannot directly observe intelligence. It is an inference from the

observation, at a rather crude level, that some individuals are good and others are bad at solving problems. No evidence is adduced about why they are so. There is no basis for the assumption that it is because they possess a certain quantity of a something-or-other called intelligence. Might it not be worthwhile to go back to the stage of uncommitted observation?

It is instructive to observe the spontaneous ways in which a representative group of five-year-olds tackle tasks. Some set about learning with an admirable strategy, without needing to be taught how to do so. Others, in varying degrees, do not know how to learn. Whatever 'intelligence' they possess is not being used properly. In effect, those who, of their own accord, use good learning strategies come to be looked upon as the intelligent children, and the others as the not-so-intelligent. But this practice of interpreting differences in terms of intelligence, besides being a violation of empirical parsimony, is an unhelpful and unprogressive one. If instead we train ourselves to observe the different learning-styles that children adopt, we can begin to ask ourselves whether we can improve these styles, that is to say, teach them how to learn and make them what is ordinarily called more intelligent (although it may not be some hypothetical cognitive ability we are improving, but the child's use of his abilities).

All that a low IQ tells us is that, during the test, the child has used ineffective problem-solving strategies, to the extent perhaps of not even attempting to tackle the tasks. His unproductive behavior within the testing situation may parallel that which he uses in his learning generally, so that there is a broad correspondence between IQ and school achievement. Where we go wrong is in assuming that the sample of problem-solving behavior we have been able to obtain represents his achievement-potential and that it cannot, by-and-large, be improved. If, however, we see it as merely the way in which the child sets about trying to solve problems (or trying to avoid solving them), we open up the possibility of teaching him better ways of learning.

Perceptual deficits

The same reasoning applies to diagnoses of 'perceptual handicap'. All the test-result tells us is that, within the testing situations, the child did not notice certain things or confused certain shapes, or got things in the wrong sequence. It may have been that he did not allow time for his perceptual ability to function, that is to say, he acted without sufficient information. It is doubtful whether we are measuring some intrinsic perceptual handicap or merely an aspect of the child's behavior.

The large body of research investigating the relationship between perceptual deficits and reading failure has left the last state of our knowledge worse than the first. Many studies have found that poor readers do on average less well on tests such as the Bender-Gestalt or the Frostig (a mixed perceptual and motor test). But this may be nothing more than an example of the Law of Multiple Impairment (Stott 1966). Whatever morbid condition is taken as the index-defect will have a positive correlation with a number of others. Reading failure is just as likely to correlate with chronic bronchitis as it is with perceptual defects. Maladjustment is consistently associated with chronic childhood illness (Stott 1966, 1971a). One type thereof, Inconsequence, is notably associated with poor muscular coordination (Stott 1971b), and it is argued below that it is one of the prime correlates of learning disability. This ignorance of the general relatedness of nearly all constitutional defects that has given rise to fanciful explanations in terms of distorted spatial perception and body-image, which must remain hypothetical because of the impossibility of demonstrating them empirically. In fact, studies which aim to partial out collateral impairments reveal that there is no specific relationship between perceptual deficits and reading disability (Benton 1962, Cawley et al 1960, Nielsen and Ringo 1969, Adelman and Feshbach 1971).

In reading Gredler's critical review (1970) of the correlates of reading disability one notes that such positive findings as there are relate to certain aspects of the perceptual process rather than to a general and ill-defined 'perceptual handicap'. Of especial interest is directional confusion, or a failure to maintain a consistent sequential decoding of graphemes (Jastak 1965, Doehring 1968). Efficient processing of sensory information may be likened to a hay-chopping machine: at any one time some sensory material is being received through the senses while that received a moment previously is being processed through the various stages of recognition, extraction of meaning, appraisal of value and so on. Nearly all slips of speech or mistakes in writing are due to the multi-stage process temporarily getting out of phase. The very impulsive child is notably prone to such failure in motor sequencing, resulting in jumbled speech and spatial clumsiness. Such impairments are at the borderline between perception and behavior. It is better to identify specific faults of this type than to seek a global 'perceptual handicap'.

Gredler's review enables us to isolate another aspect of the gross perceptual correlate. He quotes Hyatt's (1968) finding that children with deficits in visual-motor and auditory-vocal sequencing are poor in "active listening and seeing". "The child must be able

to think and interpret as he listens and sees, and maintain this activity over long periods of time to keep up with ongoing developments in the classroom." With this formulation we are dealing with behavior - attention, concentration, withholding of responses for long enough for cognitive (interpretive) processes to take place. Gibson (1963) notes that the child's perceptual development is tied in with attentional ability. Vernon (1970) argues that where there is some improvement in form perception it is due to an increased capacity to direct attention towards particular aspects or details of the forms presented. And reading disability may be due to a failure to develop habits of orderly and systematic analysis of shapes (Vernon 1957). What, in short, may appear in a test as a perceptual deficit may be nothing more than a failure of attention, that is to say, an error of perceptual behavior.

No more 'models'!

Those who herald the collapse of favorite explanations are no more welcomed than are bringers of bad news. Yet we have to face a position where the erstwhile explanatory props - intelligence-level, global perceptual deficit, crossed laterality - have collapsed under the weight of evidence. In their above-quoted article Adelman and Feshman, "Predicting reading failure: beyond the readiness model" urge the need for new variables. Among these they emphasize the study of the classroom behaviors which are conducive or detrimental to learning.

It is nevertheless not another 'model' that we want. The field of learning disability has already suffered too much from the importation of models from psychology and neurology. At the beginning of his review Gredler deplores the tendency to investigate single correlates, to which the researchers are emotionally attached in the conviction that they offer total solutions. The trouble with models is their exclusivity. They may prevent us seeing what is under our noses. The purpose of this monograph, therefore, is not to propose a behavioral model of learning disability, but to draw attention to behavioral aspects to which our cognitive-perceptual spectacles have blinded us.

Insofar as these behavioral aspects come to be more widely recognized we shall have to guard against allowing them to assume exclusivity. Notably we need to make more exact studies of those impairments of the perceptual processes, such as disturbances of sequencing, which can be empirically observed. Inclusivity, however, must not be adopted as a playing-safe attitude of live-and-let-live

characteristic of the 'impartial' instructor who presents everyone else's point of view but never communicates his own and has probably never taken the trouble to have one. It is just as necessary to reject or to downgrade as it is to accept and emphasize. The methodology adopted in this monograph has been to accord a certain primacy to the study of the learner's behavior because we are unable to discern faults in the perceptual or cognitive processes until these processes are brought into use. We have further to differentiate between perceptual-cognitive faults which are motivational - that is to say, where the issue is whether the acts of recognition, association, structuring and retrieval occur or not - and those which seem to be attributable to sheer inefficiency of the processes themselves due to lesion, intoxication, anoxia and so on.

Our understanding has to be dynamic in the sense that we have to follow processes and interactions. These need to be experimentally isolated and tested, but the simplistic 'model' of factor analysis, with its assumption of a number of influences or entities which contribute in accordance with their loadings, is unlikely to mirror the true state of affairs. Without long and painstaking observation of learning failure such 'loadings' can well lead the mere theoretician or experimentalist along false scents. The sine qua non for advance in knowledge in this field is work with learning-disabled children. Unless the researcher has this background he has, in popular parlance, no pegs to hang things on: he has not the experience with which to sort out the sense from the nonsense.

The temperamental variable

In their follow-up studies of children from infancy, Chess, Thomas and Birch (1959) came to appreciate the importance of temperamental differences as major determinants of a child's functioning. Chess (1968) developed this theme for the understanding of differences in learning ability. She identifies nine relevant categories of temperament which have much in common with those described in the present monograph. As she states: "A child's temperamental characteristics play a significant role in the nature of his functioning in school, because they affect both the manner in which he approaches the learning task and the way in which he interacts with other children and teachers." From this position she goes on to urge that the demands made on the child should be consonant with his temperamental style as well as his organismic capacities. This is the underlying principle of remediation developed in part V of this monograph.

As soon as one begins to study a child and to ask "Just why is he failing to learn?", it becomes apparent that it is a matter of his whole style of behavior. There is usually a close correspondence between the strategies employed within the learning situation and those used in everyday life. I shall follow Chess in using the word temperament to refer to the child's general style of interaction with his environment. It includes the degree of confidence with which he faces strange situations or new problems, his ability to reflect before acting, his determination to cope actively or his acceptance of a passive come-what-may role. If his temperament is such that, from an undue apprehensiveness, a lack of desire to cope, or sheer recklessness, he does not interact effectively with his environment, the same faults are likely to be seen in his learning. Observation along these lines makes us realize that there is, more often than not, sufficient that is faulty in the general behavioral style of the poor learner to justify our concentrating upon it in the first place.

If we follow this approach the first thing to do is to identify those behaviors which hinder the child's learning. Next we have to work towards objective description and classification. Such a classification would then provide the basis for systematic assessment. The outcome of the pursuit of this approach is presented below. The diagnostic system outlines standard faults of learning style which can be recognized by any experienced teacher of special education.

PART II . ASSESSMENT OF PRIMARY BEHAVIORAL HANDICAPS TO LEARNING

The method and instrument of assessment

This part of the monograph consists of a classification of faulty learning strategies such as has evolved from some 25 years of work with learning-disabled children. It is intended as the first stage of a progressive diagnosis in which care is taken not to draw further conclusions than the observations justify. The assessment is therefore an operational one in terms of the errors of procedure which the child is seen to be committing within the actual learning situation. As such it can be the starting point for a program for remediation. In the course of the latter the teacher learns more about the child's strategies for learning or not learning. These may of course be expected to change. The classification given in the text and summarized in the Guide to the Recording of the Child's Behavior in the Learning Situation *, with the ratings for severity

* See Appendix

of each faulty strategy, may therefore be used as a measure of the success of the remedial program. For each child there is a Progress Card* upon which the remedial teacher writes in the short code-phrase (Doesn't check, Afraid, Plays slow, etc.), with a number 1, 2 or 3 to indicate severity. In this way it can be seen to what extent a faulty strategy is persisting or being corrected.

Since the assessment is restricted to observations within the learning situation which the teacher is able to make and report, it will sometimes have to be supplemented or confirmed by enquiry into the child's developmental history, his functioning within the home and the impact upon him over the years of his family environment.

The Guide has been found useful in connection with the referral of children for remedial education. The referring teacher checks the applicable categories and the degrees of severity, thus providing essential information in a standard form. These can then be arranged in a Profile.*

The classification and the severity-ratings can also be used as an instrument for research into the incidence of each type of faulty strategy among learning-disabled and retarded children, and as correlates of whatever other variables are being investigated.

Attending: getting the information

The first stage in any behavioral process is that of getting the necessary information about the nature of the problem. It is a matter of focussing attention on those of its features which are important for reaching a correct solution. Unless a child learns to attend to the task before him - which means not attending to or being distracted by other stimuli for the time being - he cannot get the right answer except by the merest chance. Nor can we assess his mental or perceptual abilities, because he is not bringing them into use. Our first step in such cases is to find out if we can teach the child to attend.

It is of course easy to recognize inattention, or lack of concentration. But if we limit our diagnosis to noting such, this will not be of much help in arranging a remedial program for the child. There are in fact several sources of attentional failure.

* See Appendix

The most 'normal' type derives simply from a lack of training to attend to shapes, pictures and letters. These, after all, represent spatially a very small segment of a child's total environment, and unless he has been taught their importance he may be unpractised in attending to them. In some social settings children have learnt to be very attentive to the moods and behavior of the people around them, and to get gratification from human interaction and gross motor activity. It is not that they lack concentration, but they concentrate on different aspects of their environment. Nevertheless they are 'learning disabled' in terms of the educational demands of the dominant culture.

A similar state of attentional failure may arise because the whole motivational system of the child is depressed. This may be because of ill-health, wearing family tensions and anxieties, or merely because the child is undernourished or does not get enough sleep.

The above are near-normal or environmentally induced rather than deeper-lying psychogenic forms of attentional failure. Nevertheless they show as a lack of concentration, and at first sight it is hard to distinguish them from the more fundamental forms. All that can be said with certainty is that the fault seems to be a motivational one, in the sense that the necessary attention does not occur. At the outset the behavior is best recorded, at the observed degree of severity, in the category as below.

Doesn't check but can see his error when reminded to do so

1. Not impulsive but gives an ill-considered answer
2. Too sluggish to notice unless constantly reminded
3. Suffers from an extreme mental lethargy

Whether a child's inability to concentrate is environmental or due to impairment can best be discovered by the response to treatment. If it is a question only of lack of training he will respond quickly to some form of behavior modification, or conditioning from the learning-situation as a whole.

The most severe form of attentional failure stems from neurological dysfunction which results in the child's being unable to organize his behavior around an enduring interest or to cut out interfering distractions (Eisenberg 1964; Birch, Belmont and Karp, 1964). But the rapidity with which, at times, even severe distractibility may be replaced by good concentration suggests that, at the

stage at which the child is being observed, it may be nothing more than the persistence of a behavioral style acquired at an earlier stage, when there was some neurological damage or immaturity. In the meantime the neurological handicap may have disappeared, while the ability to attend lies dormant. Even where there is contemporary damage it is possible that alternative neural structures have developed. We cannot therefore expect to find a direct correspondence between distractibility and 'minimal brain damage' or any other kind of neurological impairment. Even where there is a history suggestive of the latter it cannot be assumed that the attentional failure is due to this cause at the present time. The principle should be followed of not accepting a pessimistic diagnosis until all efforts to educate the child in habits of attention have failed.

There is a tendency at the present time to lump together in a "Strauss syndrome" the whole gamut of disorganized behaviors leading to inattention and lack of concentration. As Chess points out, however, distractibility and hyperactivity often, but by no means always, occur in the same child. Every teacher of special education will recognize her description of the motorically quiet child whose mind is engaged in all sorts of side issues. Similarly, many extremely hyperactive children are capable of long periods of absorbed concentration when the activity appeals to them. Consequently we have to record attentional failure due to hyperactivity as such, in the category:

Over-active and fidgetty

1. Seems to find sitting still uncomfortable
2. Fidgets and squirms, and constantly changes his position and finds excuses for wandering around
3. Won't keep his seat, careers around the room or charges off unless closely watched

In its most severe form (No. 3 above) the behavior disturbance induces a cognitive disability that adds up to mental retardation.

Distractibility, with or without hyperactivity, is recorded under the category:

Does not concentrate

1. Responds to any distraction
2. Creates frequent distractions for himself and others
3. Has a 'butterfly' mind, flits from one distraction to another.

Again the third and most severe degree amounts to near or complete retardation. Such children may surprise by astute observations and accomplishments such as having a good memory or an ability to find their way about, which suggests that the retardation may consist in a severe disorganization of the behavioral system rather than in a cognitive deficit.

It must constantly be emphasized that the above headings do not represent a classification corresponding to the reasons for attentional failure. They are basically descriptions of behavior as observed. Diagnosis in terms of fundamental causes of the condition not only demands comprehensive developmental data, but also a judicious weighing of probabilities. Even the most experienced diagnostician has to be prepared to change his mind as he gets to know the child better.

Attentional failure is found as an aspect of other forms of general behavior disturbance. The best-documented of these is the child's failure to get sufficient information about a task because he does not give himself time to look properly. His teacher and parents will often remark that he 'doesn't use his eyes'. This is an aspect of a general impulsivity which is dealt with below under the heading of Inconsequence.

One form of attentional failure not necessarily associated with general maladjustment is a specific avoidance of all or some aspects of learning as areas of specific failure. It is typical of the child who has been unduly pressured by parents, or possibly teachers, in reading or - at a younger age - in acquiring elementary number concepts. Quite suddenly, when under stress or when he is not succeeding, the child's mind wanders, that is to say, he removes himself mentally from the situation for a few moments. Yet these few moments are enough for him to make the silliest mistakes, which may bewilder or exasperate his teacher and parents.

Any persistent failure or discouragement is likely to induce avoidance. Hence inattention of an avoidance variety may be expected as the result of an ineffective learning strategy, or for that matter of an inappropriate method of teaching. Avoidance as a reaction to failure is discussed below.

Learning disabilities as an aspect of behavior disturbance

There has been a longstanding and unresolved controversy about whether the learning or the behavior problems are primary. Summarizing a large number of studies giving contradictory results, Vernon (1957) comes to the cautious conclusion: "It seems fairly clear that in some cases the emotional difficulties are the primary

and fundamental factor in causing reading disability; whereas in others, the emotional difficulty is largely caused by the reading disability." Neither she nor the numerous researchers whose findings she quotes examine the nature of the relationship in order to discover the precise ways in which behavior disturbances may affect learning, or alternatively result from learning failure.

For such a task we require reliable and reasonably objective means of assessing behavior disturbance, and it is largely owing to the lack of such that little progress has been made in resolving the above-mentioned controversy and hence in reaching some of the important causes of learning disability. The Bristol Social Adjustment Guides (Stott and Sykes 1956, Stott 1971a) were developed to provide such a means of assessment. In the Center for Educational Disabilities at the University of Guelph the social adjustment of 72 children referred as having severe reading problems was assessed by this instrument. Of them 22 met the criterion for Inconsequence (failure to inhibit first impulses and hence to use cognitive processes effectively). The next largest group, of 14, came in the category of Unforthcomingness (extreme apprehensiveness in the face of novelty or difficulty, and fear of decision-making). In effect the Unforthcoming category probably outnumber the 'Inconsequential' in any unbiased sample of learning-disabled children, but the latter are more heavily referred owing to their general nuisance value. Of the remainder who met the criteria for maladjustment, 5 came in the category of Hostility, 7 in that of Depression, and 11 showed mixed disturbance. Of the remainder of the 72, 11 suffered from a mild general disturbance, and only two were rated as 'stable'. Behavior disturbance thus emerges as a significant concomitant of learning disability.

The BSAG has since been revised following a survey of a random sample of 2527 school-age students in Ontario (Stott, Marston and Bouchard, 1970). From this emerged the five core syndromes of Unforthcomingness, Withdrawal, Inconsequence, Depression and Hostility. Of these, the first three were viewed as primary and probably congenital impairments of temperament, and the last two as secondary, environmental complications, albeit with probable congenital components. There were also some Associated Groupings of deviant or otherwise disturbed behavior which seemed to be culturally influenced pseudo-adjustments.

This classification provides a convenient framework within which to develop the thesis that faulty learning strategies are part and parcel of the ways in which the child copes with life in general.

First to be dealt with will be the two primary types of behavior disturbance - Unforthcomingness and Inconsequence - which are likely to be well represented in any group of learning-disabled children. For full descriptions of these syndromes and the lists of their component symptoms the reader is referred to the manual of the BSAG, The Social Adjustment of Children (Stott, 1970). Below are given short descriptions of each type of maladjustment and their manifestations within the learning situation.

The Unforthcoming child

The Unforthcoming child is recognized by his meek, 'mousey' manner, his submissiveness, unventuresomeness and - in extreme cases - complete unresponsiveness. It is not however a withdrawal in the sense of being unconcerned or defensive about human relationships. The basic handicap can best be explained as impairment of effectiveness-motivation (White 1959, Stott 1961), that is to say, the level of effectiveness or competence than an individual demands in his transactions with the environment. It can best be understood by considering how normal needs for effectiveness affect decision-making. Every individual, in facing a new task, takes a decision as to whether he is likely to succeed or not. If he judges the task to be within his powers he tackles it with confidence and feels no anxiety. He may even embark upon a difficult or dangerous project with zest, in response to a need for progressively greater effectiveness. Murphy (1962; pp. 168-180) gives a valuable case-study of a little girl who, between the ages of three and four, took a spontaneous pride in overcoming fears of thunder and visits to the dentist and doctor. If this determination to exercise effectiveness in dealing with the environment is impaired, the affected person retreats from any threatening or challenging situation.

The Unforthcoming child gives in to his fears (probably normal in themselves) of anything that is strange or has a first appearance of complexity. He is apt to decide in advance that the things he is expected to learn in school are too difficult for him. In severe cases he becomes petrified with anxiety if the teacher tries - suspecting that he can really do it - to get an answer out of him. One very characteristic habit of the child who has this handicap in an extreme degree is to lower his head and peer shyly and suspiciously at the task from under his brows. He is so anxious about it that he hardly dares to look at it. In its less severe forms the child may hesitate until, out of sympathy, the teacher virtually tells him the answer. At best he will half-give it and wait for encouraging nods before daring to commit himself.

The manifestations of Unforthcomingness within the learning-situation may be recorded by the teacher as follows:

Afraid to begin or commit himself to an answer

1. Needs a lot of persuading to begin a new task
2. Constantly needs reassurance and encouragement, looks to teacher for confirmation, afraid to finish
3. 'Freezes' before the task, will hardly dare to look at the materials, needs much cajoling to get any response out of him

The Inconsequential child

The term Inconsequence has been chosen for this type of behavior disturbance because it pinpoints the nature of the temperamental handicap. Again we can relate it to the normal operation of the behavioral system. Part of the ordinary wisdom of growing up is to think ahead about the consequences of a proposed action. People normally carry out an advance cognitive rehearsal to make sure that these consequences will not be bad ones; if they judge they are likely to be, they desist from the action. It is a process of mental trial-and-error which ensures that the would-be errors never see the light of day and do no harm to anyone. In order to carry out such a mental rehearsal, however, it is necessary to be able to inhibit the first primitive impulse to act. This the Inconsequential child does not do. He acts without checking on the consequences*. His trial-and-error takes place in actual behavior, usually with unfortunate results. He tries the patience of adults by his impulsiveness, meddling, experimenting in doing things in ways that with a moment's thought he would see as foolish, interfering with other children's activities, wanting always to have his own way without regard for the unpopularity he incurs, trying to monopolize the attention of adults, speaking out of turn, becoming aggressive, boasting and clowning before other children.

*cf Kagan (1965). "Some children.....impulsively report the first classification that occurs to them or the first solution sequence that appears appropriate." They "consistently spew out the first reasonable hypothesis that occurs to them without pausing to reflect on its probable validity. Their strategy of problem solving has a shotgun character; the child firing a fusillade of answers in the hope that one will be correct."

As a false learning strategy Inconsequence is recorded under the general heading: "Acts without giving himself time to work things out".

1. Sometimes doesn't 'use his eyes' and guesses when he meets a difficulty
2. Guesses as a preferred response
3. So impulsive that he never takes time to look or to think out an answer

The Inconsequential child is often diagnosed as 'perceptually handicapped'. The truth is more likely to be that, just as he does not give himself time to think, so he does not give himself time to look. We cannot judge what his perceptual powers may be because he is not using them. Nor, for that matter, does the Inconsequential child fully use his intelligence. When he guesses rather than thinks he cuts the cognitive process out of the operation.

Inconsequence and 'minimal brain damage'

The similarity between the impulsivity of the Inconsequential child and the uncontrolled hyperactivity of some children showing indubitable signs of neurological impairment leads us to suspect that, at some stage of development, he has also suffered such (Prechtl and Stemmer 1962; Ingram 1959). We are not justified, however, in making a diagnosis in terms of minimal brain damage merely from the observation of Inconsequential behavior. Such a behavioral disability in a young child will preclude reflective thought and careful perception, so that his need for effectiveness is channelled into gross physical activity, nuisance and the seeking of attention. These kinds of behavior then become a style of life which persists as a bad habit even though the neural structures required for the inhibition of primitive impulses have in the meantime become available. The rapidity with which many Inconsequential children can be conditioned in the direction of reflectivity suggests that most of them are no longer neurologically impaired to a degree that accounts for their lack of control.

Impulsivity of culturally disadvantaged children

The young child learns progressively to inhibit his first impulses partly from experience of their bad consequences, and partly in response to the new world of achievement which reflectivity and concentration open up to him. If, in his social environment, there have been few bad consequences as far as he is concerned, or he has

not had educative toys and picture books, he will have missed out on this social learning and cognitive training. Moreover he may be presented with models of impulsivity in older members of his family. Consequently, his pattern of fulfilment will be one of gay romping with other children or delight in the sense of power gained by smashing something to pieces, but never in sitting down quietly to do a puzzle or draw pictures. It has been found that children from low socio-economic groups tend to make wild guesses if they cannot see an answer straight away (Eells 1951, Schwebel 1966). These culturally deprived children suffer a real disadvantage on entry to school because of their poor learning strategies - strategies which extend also to their performance in intelligence tests. It is understandable that they should become discouraged, and develop further unproductive strategies in the form of avoidances and compensations. Up to the present, programs for the culturally disadvantaged have been focussed almost entirely upon poverty of language and experience. These are undoubtedly an important aspect of cultural disadvantage, but until the child can learn to deal mentally with his experiences and learn to listen to language he will be unable to take advantage of a richer environment.

Avoidance-excitement

There is another type of sporadic hyperactivity and impulsivity which may be confused with Inconsequence but has a different origin. Often without warning or provocation the child will do something quite mad, such as running off or hitting out at someone, shouting excitedly or uttering some phrase quite unconnected with what he is doing. Sometimes the phrase will express murderous intent towards his father or other violent fantasy. Older boys afflicted in this way may throw themselves into a round of hectic delinquency (Stott 1950). It will usually be found that such 'mad' unpredictable behavior is an extreme form of what ethologists call displacement activity. The child is fighting down some memory too poignant to be faced. This is likely to be of some event which epitomizes the break-up or threatened break-up of his family, or rejection by his parents. A casework investigation will generally reveal an extremely stressful and distressing family-situation. This type of behavior disturbance is a means of mentally avoiding a painful reality by substituting violent physical activity and excitement. It is characterised as:

Has outbreaks of mad, unpredictable behavior

1. Looks for excitement; things have always to be 'on the boil.'
2. Without warning shouts out, jostles or strikes other children, upsets the materials
3. Has violent outbursts, such as attacking adults or other children or running off, without provocation or even being frustrated

Signs of autism?

The summary of the main types of behavior- and learning-handicap given in this monograph has to be limited to those which the teacher can not only recognize but do something to remedy. Some types of behavior disturbance, happily rare, such as the severe forms of failure in social interaction which at the present time are diagnosed as 'autism', are beyond the remedial help of the teacher, and the most that can be done is to identify them with a view to referral for psychological treatment. In school, such children are either indifferent to the play or learning materials, however attractive they may be to other children, or use them in queer ways of their own which they seldom vary. For the completeness of the diagnostic schedule possible indications of autistic behavior in the learning situation are grouped under the heading,

Has solitary, peculiar ways of using the learning materials

1. Prefers some solitary way of playing that seldom varies
2. Insists upon following his own queer procedure in exactly the same way each time and refuses to vary it.
3. Reacts against the materials, or against anything novel, as an interference with his own 'private world'.

PART III - ASSESSMENT OF SECONDARY
BEHAVIORAL HANDICAPS (PSEUDO-ADJUSTMENTS)

False solutions and adjustments

The result of employing a false strategy is, by definition, failure. The normal, productive response to failure is to look back to where the mistake lay and correct it. In many of his play activities the young child does this, and so develops manipulative skills. If he hits a peg askew with a hammer he can see the effects of his mistake and learns to hit the peg squarely on the head. But a child who is using an incorrect learning strategy dictated by a handicap of temperament is more likely to take the easier course of

avoiding situations in which he experiences failure, or compensate for his defeat by attempting to establish his effectiveness in some other direction. In these also his choice is limited by his temperamental handicap. Consequently we observe that to the latter may be added secondary types of behavior disturbance. These are pseudo-adjustments in the sense that they bring immediate relief of anxiety or a compensatory fulfilment, but worsen the child's position over the long run. They can be studied under the headings of Avoidance and Compensations.

The Avoiding strategy of the Unforthcoming child
(Avoidance-dullness)

When called upon to give an answer, or to have a try at anything, the severely Unforthcoming child just does not respond. Teachers are apt to say of him that he 'withdraws into his shell'. The natural assumption is that the task is too difficult for him, so the teacher tells him the answer or ceases to expect responses from him. In either case the child is relieved of the necessity of responding. He has found a way of avoiding being asked to concern himself with what seem to him all kinds of strange, bewildering and difficult tasks. His unresponsiveness has been reinforced. He finds that being 'dull' is rewarding, in that thereby he escapes from anxiety. Unwittingly we have trained him to be dull. This retreat into 'dullness' is the chief form of avoidance that the Unforthcoming child uses in the learning situation. It is so convincing that nearly always he is regarded as of 'low intelligence'. If he is referred for testing this impression will be confirmed by the finding of a low IQ. Then everyone is happy. The teacher is off the hook because she cannot be expected to get much in the way of achievement out of a child who "just hasn't got the intelligence." The child is happy because he has succeeded in avoiding all that nasty learning business. The administrators are happy because they have been able to place the child in a category with the authority of an expert to back them up. Only the parents, perhaps, are not so happy. They have known their child as shy and unventuresome, but in the familiar environment of the home he shows common sense and normal competence. But of course no one believes parents, especially when they try to tell the psychologist about the intelligent, foresightful things that their mentally retarded child can do, or what a remarkable memory he has! The truth may be that the child has used the same avoiding strategy of unresponsiveness and assumed dullness in the test-situation as he does in school. After all, the tasks that he is set in an intelligence test are unfamiliar (being chosen as such in order to

eliminate educational achievement), and difficult enough to test the supposed limits of his ability - in short, just the type to arouse his anxieties and to bring his avoidance strategy into play.

Chess (1968) characterises the Unforthcoming child as one who "warms up slowly" when faced with a new task; she similarly notes the tendency to mistake this temperamental handicap for low intelligence: "The teacher may incorrectly assume that he is incapable of mastering the material, even though the child's ultimate grasp would be better than that of classmates who learn more readily." In effect, once the Unforthcoming child has gained the confidence to tackle the task, his very caution and deliberateness usually mean that he employs a very good problem-solving strategy.

What proportion of our supposedly dull and retarded children are really masquerading behind a pose of mental incompetence? Without a good deal of further research it is impossible even to make the roughest estimate. We need to develop further our techniques for differentiating what we may call avoidance-dullness from genuine impairment of mental function. Something more will be said with regard to the latter below. In the meantime we can begin to train ourselves to make observations along the following lines:

Assumes the role of a dull child

1. Is very slow when expected to give an answer but is sensible in everyday life
2. Seems content to accept the role of an academically slow child, but in some situations does not seem so dull
3. Manages to get a lot of babying by extreme helplessness, or by being miserable and dependent

A diagnosis of avoidance-dullness can be made only by observing the child over a period in a number of situations. The key is the inconsistency between the slowness in academic work and adequacy or even competence in everyday life.

In activities that the child likes, or which he does not consider as part of school-learning, he may forget to be dull. Many of the activities of the Flying Start Early Education Kit (Stott 1970), if used correctly, appear thus to the child. Even some of the reading and number activities are seen more as games than as 'work'. A careful record should be kept of each lapse from dullness. The parents' description of the child's functioning in his familiar home surroundings should be heeded.

The real-life competence can be of a perverse type, as when the child acquires skill in making people minister to his or her wants by temper tantrums or pity-arousing behavior. This is the third degree of severity in the above descriptions. It is discussed more fully below under the heading of compensation.

The avoiding strategies of the Inconsequential child

The retreat from achievement of the Inconsequential child stems from his discouragement when he finds that his strategy of the quick intuitive guess does not pay. Having usually a highly developed need for effectiveness he is very sensitive about failing when at the same time his friends succeed, and so he is tempted to 'flunk out'.

True to his temperament he resorts to more inventive means of evasion. He may pose tired, lolling about in his seat, flopping over his desk, slipping under it owing to his semi-recumbent posture, lying about on the floor. He may complain of pains in his tummy or legs, or want repeatedly to retire to the washroom. He will show distractibility of a secondary type, not that of an inability to cut out extraneous stimuli, but a search for diversions as a means of quitting the task. He will have his favourite fidget such as tapping with a pencil or ruler, making noises with his mouth, finding objects to fiddle with, attracting the attention of or provoking other students. He is never short of a diversion, and this usually - despite his erstwhile fatigue - involves gross physical activity. The slide, the jumping board, the trampoline, far from preparing him perceptually for learning, reinforce in him a style of life which is inimical thereto.

This secondary distractibility is recorded under the heading, "Looks for ways of evading the task", with the following observations:

1. Shies off the task at first or soon says he doesn't want to do any more, but can be persuaded
2. Seeks excuses to get away from the task, complains of being tired or bored, wants to do something different with the materials
3. Turns away from the task, upsets the materials, behaves in a silly, clowning way that spoils the game or disrupts other children's activities

Hostile rejection of the learning situation

Hostility and Inconsequence are bedfellows. The Inconsequential child is in any case inclined to react aggressively to frustration and failure. Hostility follows when the strain his bad behavior puts upon parents and teachers make them impatient and antagonistic towards him. Indeed not to react in this way to his constant nuisance, attention-seeking and embroilments with other children requires a supra-normal forbearance which few adults possess. In short the Inconsequential child creates a rejecting situation against himself. Various authorities have made similar observations regarding brain-damaged children. For example Eisenberg (1964) notes that "the aberrant (early) behavior may induce rejection, which in turn provokes reactions which would be regarded as psychogenic if the brain-damage were left out of account." He emphasizes that because the brain-damaged child is so much at the mercy of his environment he needs more sophisticated management in order to prevent the 'vicious circle' of rejection and answering hostility from developing.

Hostility to the learning situation is recorded under the heading,

"Gets hostile and refuses to work"

1. Pouts and refuses to begin at first
2. Gets antagonistic when things go against him or he fails, and threatens to quit
3. Angrily refuses or quits the scene, and may become violent if pressure is exerted

Compensations for failure

The temperamental handicap of the Unforthcoming child consists essentially in the weakness of his need for personal effectiveness. Whereas a strongly motivated child will conquer his fears, the Unforthcoming child will give in to them. He is content to operate in a very restricted world and does not mind if other children find out more by the curiosity he lacks, and develop more advanced skills than he. Consequently - not feeling ashamed or frustrated at his inferiority - he feels little need for compensations.

Nevertheless, a person's motivational structure is a complicated piece of machinery. A child with Unforthcoming tendencies, that is to say, with limited effectiveness needs, may satisfy them by using his helplessness to gain power over adults. This is apt to occur

in those sub-cultures in which the chief concern of the mother is to save her children from any upsetting emotion. She may achieve this only at the price of becoming their servant. One is often surprised and incredulous to learn that a meek, timid little boy or girl 'leads his mother a dance' by terrific tantrums at home. Some even extend this strategy of over-dependence to other adults, cultivating helplessness and an appearance of being miserable in order to get ministered to. In extreme cases a young child exploiting his helplessness in this way presents a convincing picture of retardation. The writer has in mind a girl of nearly four years of age who, in a Nursery for the Retarded, refused to mix with other children or to engage in any play activity, but was able to have the voluntary helpers constantly nursing and consoling her. They were unconsciously reinforcing her dependence-strategy. At first she even gave the impression of being unable to fit together the two halves of a very simple picture (the first item in the 'Learning-to-Learn' section of the Flying Start materials). Tested at this time, she would undoubtedly have been placed in the category of the severely retarded. A behavior modification program was initiated covering both her time in the Nursery and in her own home, that is, the whole of her waking life, which consisted in ignoring her tantrums, her picture-of-misery acts and her sulks. In a remarkably short time, no doubt out of sheer boredom, she began to play happily with other children, and agreed to do the picture-fitting. She progressed so well - with periodic but unrewarded bids for dependence - that she was transferred from the Nursery to a Kindergarten group in our Centre. There she was able to keep up with children a year older, completed the 'Learning-to-Learn' program and (before she was five) mastered the phonic values of the nine easy letters on the Giant Touch Cards of the Programmed Reading Kit (Stott 1962). This she did in one lesson, although normally only four letters are introduced at one time, and she even wanted to go on to the next set of letters. At this time she obtained an IQ score of 92, which was probably an underestimate of her ability. On reaching five she went to Kindergarten and settled down happily as a normal child. Her previous over-dependence is a typical example of a pseudo-adjustment which brings short-term advantages but long-term disadvantages.

The Inconsequential child, who has usually strong effectiveness needs, invariably seeks to compensate for his failure by some kind of self-assertion or mischievous cleverness. His characteristic sorts of misbehavior have been listed above. He further impedes his progress in school because his thoughts are centered upon being a 'smart Alec' rather than upon learning. He may even take

a teasing delight in consistently doing everything wrong - thereby taking the frustration out of his failure by failing on purpose. Similarly he looks for foolish ways of doing things which invite failure and make a mockery of success. If one cannot become a scholar one can at least become a clown!

This form of compensation is recorded under the heading: "Tries to be clever in an unhelpful way".

1. Doesn't do things the proper way, takes short cuts which defeat the purpose of the activity
2. Adopts a don't care attitude to success or failure, and sometimes seems to court failure as if to show he doesn't care
3. Consistently gives wrong answers which contrast with cute or smart remarks

Until one has met cases it is hard to believe that the extreme of this form of perversity can also amount to what we commonly look upon as mental retardation. An instance is quoted under this heading below.

The counterpart of the above compensation in little girls is a skill in exploiting a sort of helpless charm. The child is alert and talks freely and sensibly, but shows an exasperating incompetence at learning tasks. It is as if she has discovered that the more stupid she is the more individual attention she can command. Consequently, the more the teacher tries with her, the more the pose of stupidity is reinforced. And the more attractive she is the more successful is the strategy. She comes under the heading:

Exploits her charm to play stupid

1. Enjoys individual help but doesn't make progress
2. Makes mistakes that you suspect from her general alertness are put on
3. The more help and individual attention she gets the more she regresses

PART IV - MENTAL HANDICAP

If it is true that learning disabilities arise in the main from disturbances of the behavioral system rather than from intellectual deficits, we naturally have to ask: What about mental retardation as such? A close study of how retardates behave in learning situations suggests that their retardation may often represent extreme forms of the faulty learning strategies that have been described. This must not be taken to mean that there is no such condition as mental retardation. A behavioral maladjustment may be so handicapping when it comes to learning as to render the child de facto retarded. In favor of a definition of retardation in behavioral terms is that we can at least observe and classify the behavior. We cannot say the same of 'intelligence'; it is what psychologists would call a hypothetical construct, called into being to explain differences in the complexity of cognitive function, for the existence of which however there is no supporting evidence. At least we lose nothing in defining retardation by the sorts of 'retarded' behavior observed. And in doing so we stand a chance of making new scientific breakthroughs (which occur when people are able to re-classify observations afresh without feeling compelled to force them into traditional concepts.) We also stand a chance of alleviating the retardation by changing the behavior. As Benton (1962) says: "the notion of a psychogenically determined mental deficiency is an inviting one, because it promises to serve as a valuable working hypothesis in a field which is largely characterized by attitudes of therapeutic fatalism."

Not long ago autistic children were generally classified as mentally retarded. Now autism is regarded as a severe form of behavior disturbance. Nearly always it leads to a degree of learning disability equal to that of the retardate. But only this form of behavior-cum-learning handicap has been differentiated from retardation. In the latest work on autism, the factor which was previously held to distinguish it from retardation, namely evidence of normal mental ability in some area of function, is now treated as diagnostically irrelevant (Deslauriers and Carlson 1969). It is enough that the child's behavior shows the critical features of autism, even though it results in all-round mental incompetence. Benton points out that if motivational factors are important in this particular type of de facto mental deficiency they may be equally important in other types.

For many years Benton has been drawing attention to the possibility of a psychogenic or motivational pseudo-feeble-mindedness. In the above-quoted review paper he points out that partial

intellectual failure from motivational reasons - the well-known 'emotional blocks' in arithmetic or other academic subjects - is universally accepted. Closely paralleling one of the categories of the present classification, he draws attention to the persistent avoidance reaction observed in reading disability. He suggests a distinction between avoidance resulting from repeated and painful experience of failure (one of the pseudo-adjustments listed above) and a primary anxiety-avoidance, which has been noted as a concomitant of Unforthcomingness. Such partial intellectual failures, Benton argues, at least establish the concept of a "motivationally determined defect state" which renders that of a global psychogenically determined mental deficiency more plausible. He goes on to point out that "the high incidence of neurotic and psychotic traits in mental defectives has led some students to advocate that the distinction between mental deficiency and mental disease is artificial and unfruitful."

In fact we do not have to go as far as to espouse the idea of a motivationally determined global mental deficiency, except as the limiting case. It has been mentioned that the telltale diagnostic pointer to those types of learning disability which were seen as strategies of retreat or other pseudo-adjustment is their inconsistency: although the child may be globally incompetent in academic learning he shows normal ability in certain areas of real-life functioning.

The question remaining to be answered is what proportion of mental handicap among children is of this behavioral or motivational character. In any school for the mentally handicapped it is not hard to detect children of whom one can only say that they suffer from an extreme Unforthcomingness. One has no idea what their mental ability may be because they fight shy of any test or challenge. Others give the appearance of exploiting their social and academic incompetence as a means of controlling their human environment, after the manner of the little girl described above. One can also observe 'retardates' who clown in the most sophisticated manner, while showing utter incompetence in learning tasks. Some of them could be extreme cases of 'playing daft' as a compensation for the failure of their Inconsequential style of life when it comes to learning. The writer recalls a lively little girl of eight in a center for the trainable retarded, who got every answer wrong except when, evidently by mistake, she got one right. She quickly 'corrected' it to make it wrong. We then kept a record of her

responses on a task in which she could get a proportion right by chance, but she never did. When her bluff was called she got every one right. Often she forgot to be retarded by making intelligent remarks about her environment.*

Discussion of the possibility of pseudo-feeble-mindedness is rendered difficult owing to our contemporary confusions about terms. In many of the studies that Benton quotes the terms 'motivational' and 'psychogenic' are used in the narrow sense that the patient has some unconscious motivation to appear defective, that is to say, the condition is a secondary pseudo-adjustment. The view taken in this monograph is that the primary behavioral handicaps to learning spring from temperamental impairments. There is some evidence with regard to Unforthcomingness in children (Stott 1959), and to similar behavior in animals (Thompson 1957, Ader and Belfer 1962) that the behavioral impairment is related to prenatal stress. The high incidence (31 percent) of motor impairment among Inconsequential children (Stott 1971) points to a common neurological factor between the two conditions which would also probably be congenital. This brings us into conflict with a well-established principle of classification in mental deficiency - the assumption of a dichotomy between organic and psychogenic conditions. According to the above evidence, a motivational handicap may have an organic origin just as much as may a cognitive handicap. If nothing else is conceded, a case has at least been made for putting some of our traditional diagnostic categories in the melting pot.

There is yet a further complication. The effects of even the clearest neurological damage are in some degree subject to motivational control. A girl attending our Centre who in school had a petit mal epileptic attack every two or three minutes used to ride around for an hour on her bicycle without ever falling off. A drunken man sways about on the sidewalk, but crosses a busy street without faltering. It is as if the damage in these cases consists of an inability to "keep hold of the reins". The affected person loses directive control for the time being of some stage of the behavioral system - whether it be at that of focussing attention on a task, mustering the motivational strength to cope with it, or motor control.

* Once when the writer was working with her she pointed out of the window and said, "Those railings need painting. If it rains they'll go rusty." Her retardation was in part a form of retaliation against a fashionable and ambitious mother who rejected her because of her behavior disturbance, supposed retardation and unattractive fatness.

An analogous loss of concentration, after a good start, is frequently observed in 'mongoloid' defectives. For short spells many of them show relatively good learning ability, and their humor and social sense suggest that they are sometimes able to grasp subtle relationships. If this is the nature of their handicap it would point to methods of remedial teaching, by short spells with intervals for 'recharging the batteries', which could bring many 'mongols' into the 'educable' category.

The short attention-span of some normal-appearing learning-disabled children may be a lesser degree of the same neuro-physiological impairment. It is recognized by a collapse of mental function, as if the 'batteries' had run down. In our diagnostic scheme this tendency to fatigue is recorded under the heading:

"Concentrates well at first but soon tires":

1. After a few minutes begins to get things wrong that he was getting right
2. 'Fades' after a few minutes of concentration
3. Any concentration is a tremendous effort which is not kept up for long

There is a further class of truly mentally handicapped children whose mental processes are so damaged that they fail to react to, let alone deal effectively with, their surroundings. Even such a diagnosis must always be regarded as provisional or 'the best we can do', because the unresponsiveness and the apparent unawareness can be an extreme form of retreat from reality. At this degree of handicap, however, where expert clinicians may disagree, we cannot expect the teacher to make fine distinctions. The most we can do is to provide him or her with the means of reporting complete unresponsiveness, unawareness or inability to 'get off the ground' as far as the understanding is concerned. These observations are recorded under the heading:

Does not seem aware of the nature of the task

1. Difficult to get him to understand what to do
2. Doesn't seem aware that something is required of him but attends to the materials
3. Disregards the materials soon after noticing them

We should accept this characterization of a child only after we are convinced that none of the temperamental handicaps described above apply. Above all, we have to guard against reverting to the

all-too-easy verdict of mental deficiency as a cover for our own failure or discouragement. It should be made only after a long period of patient observation and experiment with the aim of getting the child to make even a small start with learning materials. Some children need a very long time to adjust to a strange situation, and the defensive 'retardation' of others can be exceedingly convincing.

In sum, the final state of de facto mental retardation may be due to (a) severe impairment of the perceptual or thinking processes as such; (b) ineffective use, or lack of use, of these processes as an aspect of severe behavioral handicap, with an eventual retardation of concept-development; (c) a retreat into mental incompetence as an avoiding or compensating strategy, similarly with an eventual paucity of concept-formation; (d) a combination of any of the above. No formal, once-and-for-all test is going to help us in allocating a case to any of these categories. Where there is obvious physical derormity, as in 'mongclism', we may say that there is a prima facie organic component; but this does not rule out the secondary pseudo-adjustments. Where the child is of normal appearance we cannot rule out organic lesion because the damage may have been done to the nervous system at past the organogenetic stage of gestation. Even where there is no evidence of neural dysfunction by way of poor motor coordination, speech defect, squint, etc., we can never be sure that some damage has not occurred specifically to those structures governing the motivational system.

The implication for programs in mental retardation is that every retarded child should be the subject of continuous diagnosis. This should proceed from the observation of the nature of the handicap in behavioral terms, to which will be added neurological and developmental findings. Above all the limits of the child's functioning should be explored by conditioning in the direction of improved behavior styles. Such a program would stand in sharp contrast to the all too prevalent contemporary practice of diagnosis with an intelligence test providing the critical information. The resulting expectation of low performance becomes self-confirmatory because no one tests it by trying to improve the child's mental functioning.

PART V: TECHNIQUES OF REMEDIATION

The remediation of Unforthcomingness

People who are concerned about the welfare and education of children often react sharply against suggestions that a form of handicap is congenital or 'constitutional', which they regard as a condemnation to incurability. This reaction rests upon a misunderstanding of the nature of many such handicaps. That some are incurable cannot be denied, but others take the form of a vulnerability to everyday stresses with which the normal child can cope. Consequently, as Eisenberg, quoted above, points out, children of this sort will be very responsive to a therapeutic environment that avoids exacerbating their handicap and at the same time stimulates normal function.

Unforthcomingness, although a deepseated impairment of temperament, is a handicap of the 'vulnerability' class. Normal people withdraw from tasks which are beyond their powers. The Unforthcoming child is different only in degree. His overcaution, or lack of confidence, is so extreme that he appraises nearly all tasks as too difficult and nearly all strange situations as bewildering.

The key to a remedial program for the Unforthcoming child is to let him learn by carefully regulated experiences that he can cope with learning tasks. Of course this cannot be done by telling him that he can get the answer if he tries, indeed this is likely to reinforce his apprehensiveness. By putting activities in his way that he finds he can manage, we reinforce his decisions of, "I can do it." In other words, he gains confidence by experience of success. This requires a carefully programmed series of activities so graded that he is never tempted to relapse into his "Can't do it" attitude. He should never be allowed to remain in the position of stalling and bewilderment, especially when he sees that an adult is expecting an answer from him. Such confrontations reinforce his retreat into dullness. The teacher should intervene to make the task easier, but she should never yield to the very human temptation of telling him the answer in the hope that he will get it right next time. The final solution must always be his, and he must feel it to be so.

Ideally the Unforthcoming child should be allowed to practise coping without having to respond to an adult - or if the adult is present, to do his learning in his own time in a game-situation with other children. A game can be treated lightheartedly, with successes quickly obliterating the failures. The game-situation

also permits immediate reinforcement of an effective learning strategy and the 'punishment' of an incorrect one. For these reasons the entire Flying Start Program and the Programmed Reading Kit (except for some written exercises) (Stott 1962) are made up of games.

Nonetheless we have to recognize that the lack of confidence of the Unforthcoming child is a handicap of temperament which nearly always has a constitutional origin. We cannot therefore expect to effect a radical cure any more than we can in chronic diseases such as asthma. We have to manage the weakness by controlling the child's learning program over a long period. If at any time he finds himself overwhelmed by pressures and difficulties which he cannot meet, he is likely to relapse into avoidance-dullness. Fortunately, as they begin to reach adolescence, many Unforthcoming children - especially boys - spontaneously develop confidence. The important thing is that during the pre-pubertal period they be prevented from retreating into dullness to such an extent that their minds remain undeveloped and they become in reality dull or retarded.

The remediation of avoidance-dullness

Being a strategy of the Unforthcoming child to escape pressures, avoidance-dullness should be treated along the lines as described in the foregoing paragraph. The chief difficulty will be in the first 'cracking of the shell'. Extremely easy tasks should be presented in the first instance, but in a way that the child does not see them as tasks at all. To cope with the refusal of the 4-year old girl described above even to put together the two-piece pictures, she was seated at a table and allowed to watch other children doing the task, then after a few rounds the two halves, almost touching, were casually placed in front of her. Forgetting her role of non-participant she straightened them to make a complete picture. Attention was drawn to her achievement and she was copiously praised. On the next round of handing out the pictures the halves were placed before her slightly further apart, but still without any injunction to try to fit them. She repeated her previous performance. After a few minutes she was quickly fitting the halves when they were handed to her separately. Each of her 'lapses into brightness' was again copiously praised.

Once we are convinced that a child is 'posing dull' he can sometimes be persuaded to drop the pose by calling his bluff. Naturally we must not do this in a blaming or reproachful way, but rather by making a joke of it. "I think you can do it really, but

you are just teasing me" or "You are just waiting to see if I can do it." "Alright, I'll do the first one and you do the next one." Often the child will claim that he was pretending he could not do the puzzle (thus saving his face). We had one instance of a five-year-old girl spontaneously declaring after one session that she was not going to be 'silly' any more but was going to do her best.

The remediation of Inconsequential attitudes to learning

Our remedial strategy with the Inconsequential child must be directed towards helping him overcome his hit-and-miss approach to learning and teaching him to use his perceptual and mental abilities. Once again, it is of no use constantly to tell him to look and think before he acts. We have to put him in situations where he wants to succeed, but where guessing does not pay. This is done in the Flying Start by involving him in games with other children that need a certain amount of forethought. Within such controlled situations most young Inconsequential children can be taught to use good learning strategies in a remarkably short time. It is as if the ability to think ahead has developed as an alternative to the impulsivity, but has lain dormant. We aim to call it into use by letting the child discover that it is a more effective and more satisfying strategy for what he himself wants to do. Such a remedial program is based upon sound learning principles in the psychological sense. By a system of immediate rewards and non-rewards the child becomes conditioned to act with forethought rather than to guess.

In the Inconsequential child who has developed strong avoidance we have to expect wariness and reluctance when faced with any learning task. It is fatal in such circumstances to use compulsion; the child's avoiding strategies, conscious or unconscious, will always be stronger than the means of compulsion. The key is to have at one's disposal a number of very attractive activities which the child finds it hard to resist. Preferably there should be some sporting element in them, because he is usually eager to accept the challenge of competition (provided of course that he has a fair chance of winning). And since we cannot expect him suddenly to be able to sit still all the time, the activities should involve some physical activity, even though it be only of the upper limbs, that will organize his fidgets and keep his potentially mischievous hands occupied.

We should not get worried about complaints of being tired, so long as he does not show a constant lifelessness or lassitude (in which case the parent should be asked what time he goes to bed,

or be advised to take him to the doctor for a check on the possibility of a physical illness). If on release from the task he gaily romps with other children, slides on the floor or otherwise exerts himself physically, complaints of being tired can be ignored. Also, provided the activity is attractive to other children, we can safely ignore complaints that it doesn't appeal to him or that he is bored with it before he has given it a fair trial. If, however, he demands a change when he has worked with it a fair time or a little longer than usual this should be conceded as a reward.

We shall never be able to cure avoidances if the learning-situation continues to be disliked or unattractive. For this reason it is a mistake to force the Inconsequential child into a monotonous, supposedly distraction-free environment. Such a built-in aversiveness could in the long run have the effect of strengthening the avoidance of all learning. Moreover, a child has to learn how to concentrate in the everyday environment of the classroom. He will do so only if the basic reason for the avoidance is removed, that is to say, he finds the learning activity more agreeable than the possible diversions.

We have nevertheless to counter the pseudo-adjustments of the Inconsequential child. He undoubtedly derives considerable gratification from his hyperactivity, clowning, attention-seeking and disruptiveness. So long as they remain uncurbed he will persist in them because they are self-reinforcing in the short run. Consequently, he makes no progress in a completely permissive classroom regime. Under such conditions he will continue to lie about on the floor or lool in his desk in a way that prevents him from working, quit the task when he feels inclined to, or get into altercations with others of his sort. When he gets sufficiently keen on the activities to accept certain conditions for participation, he should be persuaded by a suitable behavior-modification procedure to sit squarely in his seat and to behave generally in a way that is conducive to learning.

If the Inconsequential child continues to disturb the game or some other learning-situation the treatment should be seen as a logical consequence of his bad behavior: he has to withdraw from the activity until he is willing to participate properly. He should be made to sit in a chair apart from the group, with a choice either of an individual activity or just doing nothing. It should be made quite clear that after a very short interval, say of two minutes, he can rejoin the group whenever he wants to, provided he is prepared to behave himself. The essence of this 'punishment' is exclusion from

the group and seeing the remainder getting on with the game without worrying about him. In a very short time he is likely to make his way over to the group and join in as if nothing has happened. This should be allowed without further words of warning, so that he can mend his ways without losing more face than necessary.

On no account should such exclusion be made to appear as rejection. Hence the importance of giving him the option of returning when he wishes, and refraining from comment when he does. He must not be characterized before other children as a 'bad boy' (which is an invitation to play such a role). And above all he must not be put outside the room. Such a symbolical act of rejection is virtually certain to induce a counter-rejection of and hostility against the school-situation and all those connected with it.

Dealing with Hostility

The natural response to feeling oneself rejected is to save one's feelings and self-respect by answering with more decisive rejection. (Witness to the vengeful spite of the jilted lover). Few severely Inconsequential children have not experienced such rejection and have not developed a corresponding readiness to hostility. For this reason the teacher must be prepared for antagonistic and hostile reactions and know how to deal with them.

Hostility takes two main forms, according to the child's temperament and his family experiences. The first is a sullen, moody refusal to participate; the second is angry refusal, threatening to quit or actually quitting the room, with physical aggressiveness if restrained from doing so or being forced to keep his seat.

These are anxious, critical moments for the teacher, and he or she should follow clear rules for dealing with such a crisis. The first rule is not to feel challenged to a battle which it is important to win, or that one's competence as a teacher is at stake. Nor need one worry that failure to mete out the regular punishments to a hostile child will let loose the gates of hell. Hostile children usually have bad relationships with their age-peers, and the latter, having no desire to be 'in their shoes', will not model their behavior on them. It may be necessary to lose every battle in order to win the war.

The second rule in dealing with hostile, provocative outbursts is, unless the child is liable to hurt himself or another child, not to get into a tussle with him. An episode of screaming, kicking or biting is both unedifying and untherapeutic. If physical restraint is necessary it can take the form of a hold that can be transformed into a hug or a game, such as swinging the child gently. By physical contact the teacher expresses his or her kind feelings for the child. Angry refusal to work or quitting the group should be met with emphasized coolness and non-rejection bordering on tenderness. (Hostility which fails to provoke anger and rejection loses its point, and so is not reinforced. To respond to it by anger is reinforcing and hence secures its repetition). The child should be left to sit out his sulk or his anger some place in the room of his own choosing, or even given a comfortable or privileged location. When he wishes to return to the group he should be allowed to do so unobtrusively. At the first opportunity make some comment upon how well he is doing.* If the child persists in his angry mood there is no point in trying to shake or cajole him out of it. Emotionally he needs to be that way for the time being. But a really bad day, when no progress seems to have been made, is often followed by a good one; the patience and the kind consideration have worked on the child in the interval, and he comes back ready to make amends and get in the teacher's good books once again.

The hostility which the teacher meets in school is nearly always generated within the child's domestic environment. The child feels let down by the parent to whom he has been most attached, and sets out to free himself from the attachment by summoning up hatred. Such a situation calls for family-therapy, which is usually beyond the role of the teacher. Nevertheless, if no specialist help is available the class teacher or Principal may have to talk with the parents. The latter may be well-intentioned and affectionate, but may have destroyed the child's faith in them by threatening to put him out of the home if he continues to be badly behaved, or - as a by-play of their own quarrelling - the mother may threaten to desert the home. If a boy insists upon doing housework for the mother, minding the baby and so on, it can be reckoned that he is in a state of anxiety about losing her. Anxiety has only to become intolerable to turn into hostility, and the two may alternate.

* The above procedures were followed in the treatment of the extreme hostility, with frequent resort to physical violence and quitting, of the 9-year-old boy who became the star actor in the film, "Johnny can learn to read" (a documentary of the use of the Programmed Reading Kit with learning-disabled children at the Center for Educational Disabilities at the University of Guelph).

The use of behavior-modification techniques

The methods of remediation advocated in this monograph, and used in the Flying Start Learning-to-Learn Kit, follow the same learning principles as those upon which behavior-modification techniques are based. The kinds of learning-behavior we wish to encourage are reinforced by the child's discovery that they are more effective. The kinds that we wish to discourage are ignored in the sense that we do not comment upon them, but also the child sees that they are ineffective. The rewards and 'punishments', in the psychological use of the term, are built into the activity itself. Moreover they follow immediately, as the case may be, upon his use of a good or poor learning strategy.

Nevertheless it is an over-simplification to suppose that all undesirable behavior will disappear simply by being ignored. This view results from an unsophisticated application of learning-theory to educational practice. It assumes that the strongest motivating factor in a child's behavior is always that of gaining attention. Hence, it is argued, the attention he gets by being corrected is rewarding to the child and will consequently lead to a repetition of the undesirable behavior. If this were the case, all the teacher would need ever do is to sit in a classroom and let the students freely indulge in any form of misbehavior they like, until they tire of it. Such experiments in ultra-permissiveness have led to disaster. We have to recognize the fact that human behavior evolved within social frameworks which have always imposed restraints. Outside his framework of social discipline the average human being goes to pieces, as has been found with soldiers fighting among alien populations. The great majority of children learn to behave themselves by heeding the approval and disapproval of their parents, teachers and age-peers. For the great mass of citizens, whether adult or juvenile, deterrents are necessary, and they will take advantage of the absence or non-enforcement of such to indulge in socially undesirable behavior. This principle certainly applies in the classroom: when tempted to indulge in disruptive behavior the normal child desists therefrom when faced with the disapproval of the teacher or his classmates. And the fear of disapproval is stronger - let us repeat, for the normal child - than the notoriety gained by bad behavior.

The teacher has to learn to judge the child's motivation. If attention-seeking is paramount, whatever its disadvantages in the form of disapproval or punishment, then the teacher would, so far as is practicable, ignore the bad behavior and give fulsome attention as a reward for good behavior.

The difficulty is that some disturbed and learning-disabled children have developed their own motivational systems by which bad behavior and poor learning-strategies are rewarding for the time being whether or not they are ignored. These, in the text above, have been referred to as pseudo-adjustments. The Unforthcoming child may assume a life-style of mental incompetence and over-dependence which enables him to escape from anxiety. The Inconsequential child gets a lot of fun out of his physical hyperactivity, smart repartee, disruption and clowning. In these cases to ignore is to give free rein. The extremely Unforthcoming child may snuggle down into a de facto and officially confirmed mental deficiency. Sooner or later the annoyance generated by the Inconsequential alienates the sympathy of adults and invites retaliation from age-peers, to which he reacts by hostility and aggression. We cannot, therefore, ignore these self-perpetuating pseudo-adjustments.

Regular behavior-modification techniques have nonetheless to be used in certain circumstances. These are when the child's pseudo-adjustment and the accompanying poor learning style do not yield to the positive incentives as provided by the games. This may be so in particular with the child who has developed the teasing form of 'playing daft' as a defence against failure, and with the child who is extremely distractible or fidgety. They require a more tangible reward-system than the knowledge of success, because they have learnt to do without success and almost to value failure, as the hippie does at a more sophisticated level.

One of the problems about the regular use of behavior modification in the classroom is what to use by way of reward. For some autistic and retarded children, and young maladjusted children in an individualized setting, small pieces of candy may be effective. But a group of sophisticated Inconsequential boys will soon tire of bits of candy. Irritating the teacher is far more rewarding. The earning of tokens which are used to buy some toy has yielded good experimental results, but the device has had the advantage of novelty, and gets cumbersome and expensive as a regular practice. In our Centre we finally installed some table hockey-game boards, access to which is granted on production of a ticket. A ticket is won by spells of good work and behavior. Each spell of work, lasting between 10 and 20 minutes, earns up to three points. Nine points are needed for a ticket giving an entitlement to 10 minutes play. The points may also be counted towards a team score, with a bonus reward for the winning team. In order to avoid disappointment, a student may carry over the points he has earned, if less than nine, to the next lesson. For individual work points are recorded by fitting holed chips on to pegs. These visible tokens are helpful when working with young or very disturbed children.

It is fashionable at the present time, from an eagerness to demonstrate the efficacy of behavior-modification, to secure a return of the undesirable behavior by the withdrawal of the procedure. Since we cannot continue dispensing tokens to a child indefinitely, such a reversion would signal the failure of the treatment. Consequently, as soon as the incentive provided by the tokens has induced the child to concentrate on the task and to do his best (or whatever change in learning-style we reinforce), we should begin to wean him away from the externally provided motivation and encourage him to develop motivations within himself. In other words, the 'carrot' of the tokens or the candy should be replaced by his gratification in being able to succeed in the task. Provided he is really beginning to use effective strategies this will happen naturally, since a child's self-esteem and sense of personal effectiveness are usually more important to him than minor physical gratifications.

The method of teaching and the whole atmosphere of the classroom should always positively reinforce good learning attitudes and reduce to a minimum the rewards of behavior which is detrimental to learning. This cannot always be done by following the dogmatic formula of ignoring undesirable behavior. Rather it means making the learning-situation itself rewarding and free of anxiety because the children see that they can succeed, and further reinforcing productive learning strategies by praise.

The early education of the ordinary child

When we speak of a general classroom atmosphere which reinforces good learning attitudes by making learning a pleasure it is evident that we are advocating a sharp breakaway from the traditional philosophy of education. This finds its expression in the expectation that it is the child's duty to listen to explanations and to do exercises, irrespective of the gratification they afford him. This philosophy used to be expressed in the saying that it's good for children to have sometimes to do things they dislike. As we have learnt from painful experience, only a minority of children thrive academically despite such built-in emotional obstacles. They are those who have an over-measure of determination to succeed, or a combination of a pliable temperament and a home-culture which demands success. The majority, even of those of stable temperament, either opt out or settle for a getting-by level of achievement, resorting to rules-of-thumb, dependence on being told, resistance to the effort of understanding - in short, to the strategies for coming to terms with non-achievement that John Holt has so ably described in How Children Fail (Holt 1964). In sum, we have to tailor the learning

program to the motivational strengths and weaknesses of the ordinary child as well as to those of the temperamentally handicapped. There is no saying what possibilities for advance in our civilization there may be once we can maintain a zest for learning in the great majority of our young citizens. But because the compounding with failure begins early we shall also have to set the child on the right road to learning in the earliest stages of education. Probably a child forms enduring strategies for learning, for better or for worse, as a result of his experiences between the ages of five to seven.

The main body of this monograph has had to do with the temperamentally handicapped because they present the most pressing problems to the teacher and because very explicit and well thought-out programs are required for them in order to avoid educational and social disaster. But they are not a class apart. When we try to define maladjustment (and the learning-disabilities it brings in its train) we are confronted with a continuum with no clear cut-off point. By commonly accepted criteria some 13 percent of boys and 7 percent of girls are rated as maladjusted in the sense that their behavior handicaps are seriously injurious to themselves and possibly also to other people. There are however another 10 percent of boys and girls who because of a degree of behavioral handicap are by no means making the best social adjustment or the best use of their abilities. Because the learning-situation, as these children find it in ordinary schools, presents them with so many uncertainties which are apt to undermine their confidence, and demand an ability for reflective thought which they lack either from temperament or training, their weaknesses will be more apparent in their learning failure (or in achieving less than their potential) than in social maladjustment. It is this middle group of neither maladjusted nor completely stable children who are inclined to opt out by resorting to pseudo-adjustments. The essence of such pseudo-adjustments is that the child turns for gratification to some situation which serves as a solution to or escape from his immediate difficulties, but which store up bigger problems for him later. Since the long-term effects of non-achievement in learning are not apparent to the child it is in this area that the temptation to resort to pseudo-adjustments is the greatest. Indeed the conditioning process works in favour of the immediate rewards offered by the pseudo-adjustment. The Unforthcoming child finds relief in over-dependence and/or dullness. The Inconsequential gets fun out of good-hearted aggressiveness, attention-seeking and clownishness. We have to counter these temptations by making the learning program attractive. Our final conclusion is that we should give more thought to the early education of the ordinary child.

References

- Adelman, H. S. & Feshbach, S. Predicting reading failure: beyond the readiness model. Exceptional Children, 1971, 37, January.
- Ader, R. & Belfer, M. L. Prenatal maternal anxiety and offspring emotionality in the rat. Psychological Report, 1962, 10, 711-18.
- Benton, A. M. Some aspects of the concept of psychogenic mental deficiency. Proceedings, London Conference on the Scientific Study of Mental Deficiency, 1962, i. 243-250. Dagenham, England, May and Baker.
- Birch, H.G. The problem of "brain damage" in children. In H. G. Birch (Ed.), Brain damage in children: biological and social aspects, 1964. Baltimore, Williams and Wilkins.
- Birch, H., Belmont, I. & Karp, E. Excitation-inhibition balance in brain-damaged patients. Journal Nervous Mental Disorders, 1964, 139, 537-544.
- Cawley, J. F., Goodstein, H. A. & Burrow, W. H. Reading and psychomotor disability among mentally retarded and average children. Storrs, Connecticut, 1960, School of Education, University of Connecticut.
- Chess, S. Temperament and learning ability of school children. American Journal Public Health, 1968, 58, 2231-2239.
- Chess, S., Thomas, A. & Birch, H. Characteristics of the individual child's behavioral responses to the environment. American Journal Orthopsychiatry, 1959, 29, 791-802.
- DesLauriers, A. M. & Carlson, C. F. Your child is asleep: early infantile autism. Homewood, Illinois, the Dorset Press; Nobelton, Ontario, Irwin-Dorsey, 1969.
- Doehring, D. C. Patterns of impairment in specific reading disability. Bloomington, 1968, Indiana University Press.
- Drillien, C. M. The growth and development of the prematurely born infant. Edinburgh, 1964, Livingstone.
- Eells, K.(Ed.) Intelligence and cultural differences. Chicago, 1951, University of Chicago Press.
- Eisenberg, L. Behavioral manifestations of cerebral damage in childhood. In H.G. Birch (Ed.), Brain damage in children: biological and social aspects, 1964. Baltimore, Williams and Wilkins.

- Gibson, E. J. Perceptual development. In H. W. Stevenson (Ed.) 62nd Yearbook of the national society for the study of education. Chicago, University of Chicago Press, 1963.
- Gredler, G. R. Severe reading disability: some important correlates. Paper read at the Conference of the United Kingdom Reading Association, Durham, 1970.
- Holt, J.C. How children fail. 1964 New York, Pitman
- Hyatt, G. Some psycholinguistic characteristics of first graders who have reading problems at the end of second grade. Unpublished doctoral dissertation, University of Oregon, 1968.
- Ingram, T. T. S. Specific developmental disorders of speech in childhood. Brain, 1959, 82, 450-467.
- Jastak, J. & Jastak, S. Wide Range Achievement Manual. 1965. Wilmington, Delaware Guidance Associates.
- Kagan, J. Information processing in the child. In P.H. Mussen, J. J. Conger and J. Kagan (Eds.). Readings in child development and personality, 1965, New York, Harper and Row.
- Kohlberg, L. Early education: a cognitive-developmental view. Child Development, 1968, 39, 1013-1062.
- Murphy, L. B. The widening world of childhood. Chicago: Basic Books, 1962, pp. 168-180.
- Nielsen, H. H. & Ringe, K. Visuo-perceptive and visuo-motor performance of children with reading disabilities. Scandinavian Journal of Psychology, 1969, 10, 225-231.
- Pasamanick, B. & Knobloch, H. Brain damage and reproductive casualty. American Journal of Orthopsychiatry, 1960, 30, 298-305.
- Precht, H. F. R. & Stemmer, C. J. The choreiform syndrome in children. Developmental Medicine and Child Neurology, 1962, 4, 119-127.
- Schwebel, A. I. Effects of impulsivity on performance of verbal tasks in middle- and lower-class children. American Journal of Orthopsychiatry, 1966, 36, 13-21.

Stott, D.H. Delinquency and human nature, 1950. Obtainable direct from the Carnegie U. K. Trust, Comely Park House, Dunfermline, Fife, Scotland, price \$1.00.

Stott, D. H. Evidence for prenatal impairment of temperament in mentally retarded children. Vita Humana, 1959, 2, 125-48.

Stott, D. H. An empirical approach to motivation based on the behavior of a young child. Journal of Child Psychology and Psychiatry, 1961, 2, 97-117.

Stott, D. H. The Programmed Reading Kit, 1962. Glasgow, Holmes-McDougall: Toronto, Gage: Chicago, Scott Foresman.

Stott, D. H. Studies of troublesome children, 1966. London, University of London Press: New York, Humanities Press: Toronto, Methuen Publications.

Stott, D. H. & Sykes, E. G. The Bristol Social Adjustment Guides. London, University of London Press, 1956: San Diego, Educational and Industrial Testing Service, 1967.

Stott, D. H. The Flying Start Early Education Kit, 1970. Publication pending.

Stott, D. H., Marston, N. C. & Bouchard, S. J. Behavior disturbance in children - classification: epidemiology: etiology, 1970. Publication pending.

Stott, D. H. Manual to the Bristol Social Adjustment Guides, 1971a. London, University of London Press: San Diego, Educational and Industrial Testing Service.

Stott, D. H. Classification of behavior disturbance among school-age students: principles, epidemiology and syndromes, 1971b. Publication pending.

Thompson, W. R. Influence of prenatal maternal anxiety on emotionality of young rats. Science, 1957, 125, 698.

Vernon, M. D. Backwardness in reading, Cambridge, University Press, 1957.

White, R. W. Motivation reconsidered: The concept of competence, Psychological Review, 1959, 66, 297-333.

GUIDE TO THE RECORDING OF CHILD'S BEHAVIOR IN THE LEARNING SITUATION

(Code words in brackets)

Prepared by: D. H. Stott, Ph.D.
Center for Educational Disabilities
University of Guelph

BEHAVIOR HANDICAPS OF AN UNDER-REACTING TYPE

Doesn't check but can see his error when
reminded to do so
(Doesn't check)

1. Not impulsive but gives an ill-considered answer
2. Too sluggish to notice unless constantly reminded to do so
3. Suffers from an extreme mental lethargy

Afraid to begin or commit himself to an answer
(Afraid)

1. Needs a lot of persuading to begin a new task
2. Constantly needs reassurance and encouragement, looks to teacher for confirmation, afraid to finish
3. 'Freezes' before the task, will hardly dare to look at the materials, needs much cajoling to get any response out of him

Assumes the role of a dull child
(Plays slow)

1. Is very slow when expected to give an answer but is sensible in everyday life
2. Seems content to accept the role of being an academically slow child, but in some situations does not seem so dull
3. Manages to get a lot of babying by extreme helplessness, or by being miserable and dependent

Has solitary, peculiar ways of using the
learning materials
(Individual)

1. Prefers some solitary way of playing that seldom varies
2. Insists upon following his own queer procedure in exactly the same way each time and refuses to vary it
3. Reacts against the materials, or against anything novel, as an interference with his own 'private world'

BEHAVIOR HANDICAPS OF AN OVER-REACTING TYPE

Acts without giving himself time to look or
work things out
(Guesses)

1. Sometimes doesn't 'use his eyes' and guesses when he meets a difficulty
2. Guesses as a preferred response
3. So impulsive that he never takes time to look or to think out an answer

Does not concentrate
(Distractable)

1. Responds to any distraction
2. Creates frequent distractions for himself and others
3. Has a 'butterfly' mind, flits from one distraction to another

Over-active and fidgetty
(Hyperactive)

1. Seems to find sitting still uncomfortable
2. Fidgets and squirms, constantly changes his position and finds excuses for wandering around
3. Won't keep his seat, careers around the room or charges off unless closely watched

Has outbreaks of mad, unpredictable behavior
(U n p r e d i c t a b l e)

1. Looks for excitement; things have always to be 'on the boil'
2. Without warning shouts out, jostles or strikes the other children, upsets the materials
3. Has violent outbursts, such as attacking adults or other children or running off without provocation or even being frustrated

Looks for ways of evading the task
(E v a d e s)

1. Shies off the task at first or soon says he doesn't want to do any more, but can be persuaded!
2. Seeks excuses to get away from the task, complains of being tired or bored, wants to do something different with the materials
3. Turns away from the task, upsets the materials, behaves in a silly clowning way that spoils the game or disrupts other children's activities

Tries to be clever in an unhelpful way
(S m a r t A l e c)

1. Doesn't do things the proper way, takes short cuts which defeat the purpose of the activity
2. Adopts a don't care attitude to success or failure and sometimes seems to court failure to show he doesn't care
3. Consistently gives wrong answers which contrast with cute or smart remarks

Exploits her charm to play stupid
(H e l p l e s s A l i c e)

1. Enjoys individual help but doesn't make progress
2. Makes mistakes which you suspect are put on
3. The more help and individual attention she gets the more she regresses

Gets hostile and refuses to work
(T e m p e r a m e n t a l)

1. Pouts and refuses to begin at first
2. Gets antagonistic when things go against him or he fails, and threatens to quit
3. Angrily refuses or quits the scene, and may become violent if pressure is exerted

OTHER HANDICAP

Concentrates well at first but soon tires
(T i r e s)

1. After a few minutes begins to get things wrong that he was getting right
2. 'Fades' after a few moments of concentration
3. Any concentration is a tremendous effort which is not kept up for long

Does not seem aware of the nature of the task
(U n a w a r e)

1. Difficult to get him to understand what to do
2. Doesn't seem aware that something is required of him, but attends to the materials
3. Disregards the materials soon after noticing them

Other observed learning handicap

FLYING START PROGRESS CHART

(Pre-reading)

Name _____

Age _____

Date of entry
to program _____

School _____

Item	Record of Achievement Comments on faults of strategy (see Guide on Learning Behavior)	Looks but doesn't see error	Works with good strategy but slowly or with occasional faults	Works accurately and confidently with good strategy
2 Piece Puzzles				
4 Piece Puzzles				
Merry-go-Rounds pink green				
Mail Boxes - yellow				
Merry-go-Rounds blue yellow				
Mail Boxes - Green				
What's Happening?				
Animal Puzzles pink - 6 piece				
Matchers 1 - 5				
Mail Boxes - Blue				
Matchers 6 - 10				
Animal Puzzles - yellow - 8 piece				
Matchers 11 - 15				
Animal Puzzles blue - 10 piece				

PROFILE OF FAULTY LEARNING STYLES (Specimen completed for child showing behavioral handicaps of an over-reacting type)

Name Boy/girl Teacher
 School

Under-reacting		Over-reacting		Other	
	Doesn't check				
	Afraid				
	Plays slow				
	Individual				
	Guesses				
	Distractible				
	Hyperactive				
	Unpredictable				
	Evades				
	Smart Alec				
	Helpless Alice				
	Temperamental				
	Tires				
	Unaware				
1					
2					
3					